



EPA Region 7 TMDL Review

TMDL ID: KS-KR-04-203_1

State: KS

Document Name: LOWER KANSAS RIVER

Basin(s): LOWER KANSAS

HUC(s):

Water body(ies):

Tributary(ies): BALDWIN CREEK, BARBER CREEK, BUCK CREEK, CAPTAIN CREEK, CEDAR CREEK, EAST MISSION CREEK, KENT CREEK, KILL CREEK, LITTLE KAW CREEK, LITTLE TURKEY CREEK, MATTOON CREEK, MILL CREEK, MUD CREEK, MUNCIE CREEK, OAKLEY CREEK, STONE HOUSE CREEK, STRANGER CREEK, TOOLEY CREEK, TURKEY CREEK, WAKARUSA RIVER, WOLF CREEK

Pollutant(s): E. COLI

Submittal Date: 12/11/2006

Approved: Yes

Submittal Letter

State submittal letter indicates final Total Maximum Daily Load(s) (TMDL) for specific pollutant(s)/water(s) were adopted by the state, and submitted to EPA for approval under section 303(d) of the Clean Water Act [40 CFR § 130.7(c)(1)]. Include date submitted letter was received by EPA, date of receipt of any revisions, and the date of original approval if submittal is a phase II TMDL.

The TMDL for Lower Kansas River was formally submitted by the Kansas Department of Health and Environment (KDHE) in a letter received by the United States Environmental Protection Agency (EPA) on December 11, 2006. The public comments and KDHE's response to those comments were formally submitted by KDHE in a letter received by EPA on January 9, 2007. Lower Kansas River is a phase II TMDL. The original TMDLs were for Fecal Coliform Bacteria. They were approved January 26, 2000.

Revisions to phase II Lower Kansas River TMDLs were submitted by email June 8, 2007, September 19, 2007, and November 20, 2007.

Water Quality Standards Attainment

The water body's loading capacity (LC) for the applicable pollutant is identified and the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources is described. TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards (WQS) [40 CFR § 130.7(c)(1)]. A statement that WQS will be attained is made.

The LC was defined by a load duration curve covering the range of flows for each water body and segment. LCs were calculated by taking: (flow rate)(262 CFU/ 100 ml WQS)(conversion factor). The load is divided among the point sources for a Wasteload Allocation (WLA) and nonpoint sources for a Load Allocation (LA) with an allowance for an implicit Margin of Safety (MOS).

The TMDL for this watershed is a continuous curve calculated from discrete LCs over a range of flow conditions. The following endpoints are the goals of this TMDL for the period 2006-2010. The endpoints will be evaluated, following assessment of monitoring data collected during this period, with a goal of declaring the Lower Kansas River to be in Category 2 (attaining some of its designated uses, in this case, recreation use) for the 2012 303(d) listing cycle.

1. Monthly geometric means of E. coli bacteria at all four stations will remain below 262 counts during the

April to October period.

2. Monthly geometric means of *E. coli* bacteria at all four stations will be below 2358 counts during November to March.

3. Bacteria levels at Station 203 in Kansas City will decrease such that its monthly geometric mean will be within the range of values seen at the three upstream stations.

The endpoints will be reached as a result of expected reductions in loading from the various sources in the watershed resulting from implementation of corrective actions and Best Management Practices (BMP), as directed by this TMDL. Achievements of the endpoints indicate loads are within the LC of the stream, WQS are attained and full support of the recreation use of the stream has been restored.

Numeric Target(s)

Submittal describes applicable WQS, including beneficial uses, applicable numeric and/or narrative criteria. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, site specific if possible, was developed from a narrative criterion and a description of the process used to derive the target is included in the submittal.

Kansas WQS Geometric Mean of at least five samples of *E. coli* collected in separate 24-hour periods within a 30-day period shall not exceed the following criteria beyond the mixing zone.

Primary Contact Recreation – Class B: 262 CFU/100 mL, from April to October 31; 2358 CFU/100 mL from November 1 to March 31.

Primary Contact Recreation – Class C: 427 CFU/100 mL, from April 1 to October 31; 3843 CFU/100 mL from November 1 to March 31.

Secondary Contact Recreation – Class B: 3843 CFU/100 mL from January 1 to December 31 (KAR 28-16-28e (c)(7) (D&E)).

Designated Uses:

Primary Contact Recreation – Class B: All Main Stem Kansas River Segments, Wakarusa River and Kill and Turkey Creeks.

Primary Contact Recreation – Class C: Mud, Captain, Stranger, Cedar, Mill, Little Kaw, Wolf, and Little Turkey Creeks

Secondary Contact Recreation – Class B: Oakley, Stone House, Baldwin, Buck, Kent, East Mission, Tooley, Muncie, Barber and Mattoon Creeks.

This TMDL is based on the numeric water quality for *E. coli* bacteria.

Pollutant(s) of concern

An explanation and analytical basis for expressing the TMDL through surrogate measures (e.g., parameters such as percent fines and turbidity for sediment impairments, or chlorophyll-a and phosphorus loadings for excess algae) is provided, if applicable. For each identified pollutant, the submittal describes analytical basis for conclusions, allocations and margin of safety (MOS) that do not exceed the LC. If submittal is a phase II TMDL there are refined relationships linking the load to WQS attainment. If there is an increase in the TMDL there is a refined relationship specified to validate the increase in TMDL (either load allocation (LA) or waste load allocation (WLA)). This section will compare and validate the change in targeted load between the versions.

Due to the nature of point source versus nonpoint source contributions to *E. coli* loading, a continuous curve calculated from discrete LCs over a range of flow conditions were used to link *E. coli* water quality criteria for *E. coli* loads to sources. Nonpoint contributions to the load are strongly correlated with high flow conditions and runoff from rainfall events. Bacteria levels will improve as disinfection requirements are installed on upgraded wastewater treatment facilities, long term Combined Sewer Overflow (CSO) control plans are implemented in Kansas City and stormwater BMPs are installed in tributary watersheds. Point source contributions will dominate the loading when the stream flow is low. The TMDL is based on the numeric water quality criteria for *E. coli* bacteria. The targeted criterion is directly linked to Kansas WQS.

Source Analysis

Important assumptions made in developing the TMDL, such as assumed distribution of land use in the watershed, population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources, are described. Point, nonpoint and background sources of pollutants of concern are described, including magnitude and location of the sources. Submittal demonstrates all significant sources have been considered. If this is a phase II TMDL any new sources or removed sources will be specified and explained.

Land Uses: The watershed is 41% grassland, 36% cropland, 9% urban, and 15% woodland. Grazing density of livestock is low for the Kansas/Lower Republican Basin (25 animal units/sq. mi.).

There are several national pollution discharge elimination system (NPDES) permitted facilities discharging wastewater directly into the Kansas River or below tributary monitoring sites. The table below lists the discharging municipal and industrial facilities that potentially contribute bacteria. Nearly all of the facilities have installed disinfection treatment in their operations and have fecal coliform bacteria limits established under their NPDES permits.

Discharging NPDES Facilities

NPDES Facilities	NPDES #
Perry	KS0029084
Lecompton	KS0055581
Westar-Lawrence	KS0079821
Lawrence	KS0038644
Eudora	KS0094609
Clearview Village	KS0090671
Desoto	KS0026239
Bonner Springs	KS0082881
LV Co. S.D. #2	KS0087157
LV Co. S.D. #	KS0087874
JO Co. - Mill Creek	KS0088269
KC - Plant #20	KS0080195
KC - Plant #14	KS0080209
Jo Co. - Nelson Plant	KS0055492

Animal Feeding Operation within One Mile of Lower Kansas River

Permit Number	County	Animal Units	Animal Type	Permit/Certificate Issued
A-KSJO-BA02	Johnson	25	Beef	11/25/1996
A-KSWY-BA01	Wyandotte	175	Beef	04/30/2001
A-KSJO-BO01	Johnson	949	Beef, Swine, Sheep, Horse	08/14/2008
A-KSDG-BO02	Douglas	850	Beef	06/07/2009

General permits are in various stages of development regarding municipal separate storm sewer system (MS4) discharges of storm water. Along the lower Kansas River, MS4 permits have been in place since 2004 and are slated to run through September 30, 2009. Lawrence (M-KS31-SU01; KSR041014), Shawnee (M-KS68-SU01; KSR041033), Merriam (M-KS44SU01; KSR041019), Mission (M-KS45-SU01; KSR041021), Johnson County (M-KS52-SU02; KSR041007), and Bonner Springs (M-KS06-SU01; KSR041003) have MS4 permits in place that reference high priority TMDLs and direct installation of BMP to attenuate the discharge of those pollutants.

Additionally, the Unified Government of Wyandotte County, encompassing Kansas City, has an MS4 NPDES permit (M-MO25-SO01; KS0095656) for storm water discharges to both the Kansas and Missouri Rivers. The NPDES permit for the Kaw Point wastewater treatment plant (WWTP) facility discharging to the Missouri River (M-MO25-IO01; KS0038563) also has provisions to develop, implement and update its CSO Long-Term Control Plan. This plan addresses wet weather discharges to the Kansas River and its urbanized tributaries in the County (Mattoon and Muncie creeks) with long term planning, investment and construction for separating sewers, retention of overflows and disinfection of overflow discharges before entering the Kansas River and its tributaries. The permit and CSO provisions are now under administrative extension and process for renewing the

permit is in coordination between KDHE, EPA and the Unified Government, including issues of Missouri CSO's discharging to the Kansas River. Overall, about 29% of the drainage in the Lower Kansas River Subbasin is covered by these MS4 NPDES permits.

Point sources are identified as contributing to the E. coli impairment within all of the main stem segments; municipal storm water discharges, unpermitted sanitary or industrial discharges (sanitary sewer overflows – SSOs), and failing individual treatment systems are also acknowledged. Maps showing NPDES permitted facilities, animal feeding operations and industrial facilities are provided within the TMDL.

Nonpoint sources include: failing on-site wastewater systems, runoff from livestock pastures, improper or over application of biosolids (wastewater treatment facility sludge), seepage of manure and unpermitted urban storm water. Natural sources were also considered from wildlife contributions.

EPA concurs that all sources (point; permitted, unpermitted, illicit, and nonpoint) have been considered.

Allocation - Loading Capacity

Submittal identifies appropriate WLA for point, and load allocations for nonpoint sources. If no point sources are present the WLA is stated as zero. If no nonpoint sources are present, the LA is stated as zero [40 CFR § 130.2(i)]. If this is a phase II TMDL the change in LC will be documented in this section.

The TMDL recognizes allocations are dynamic and can vary with stream flow. The method used to account for the variation in flow is based upon load duration curves. The actual load is calculated based on daily flow value and the daily E. coli concentration. An average daily load was calculated over the recreation season.

WLA Comment

Submittal lists individual WLAs for each identified point source [40 CFR § 130.2(h)]. If a WLA is not assigned it must be shown that the discharge does not cause or contribute to WQS excursions, the source is contained in a general permit addressed by the TMDL, or extenuating circumstances exist which prevent assignment of individual WLAs. Any such exceptions must be explained to a satisfactory degree. If a WLA of zero is assigned to any facility it must be stated as such [40 CFR § 130.2(i)]. If this is a phase II TMDL any differences in phase I and phase II WLAs will be documented in this section.

In accordance with the Surface WQS at K.A.R. 28-16-28e(c)(7)(F), "Wastewater effluent shall be disinfected if it is determined by the department that the discharge of non-disinfected wastewater constitutes an actual or potential threat to public health." Therefore, wastewater released through facilities under NPDES permits will either be disinfected at mechanical plants, or with lagoons, have been retained for a reasonable amount of time to ensure bacteria die-off prior to discharge.

Typically, these limits are 200 colonies per 100mL during April through October and 2000 colonies during November through March. In a few cases, some use of the mixing zone within the Kansas River is utilized for the final permit limits placed on certain facilities for bacteria. Additionally, a few facilities have received a limit that is a translation to Fecal Coliform Bacteria from the E coli bacteria criteria in the Kansas River. With the installation of treatment system upgrades, there should be no point source induced excursions.

This WLA is based on the fact that streams are particularly susceptible to the influence of point source discharges during low flow conditions (in compliance of Kansas WQS the measure is taken at a flow of 7Q10). WLAs provided for NPDES permitted facilities (including discharges from regulated storm water outfall), do not allow for the application of a mixing zone for the initial assimilation of effluents in order to meet the criteria associated with the recreation beneficial use.

The WLA is based on the current WQS and criteria regarding bacteria in streams. In this case, geometric mean of 262 counts per 100 ml from April to October will be maintained within 30-day periods. Similarly, geometric means of 2358 counts per 100 ml from November to March will be maintained with 30 days of a storm event.

The underlined language taken from the TMDL (pg 30) is confusing and can be read two different ways. EPA has taken these statements to mean that: "...initiation of a stormwater event (inclusive of a storm water flow) rather than after the initial storm water event, which could be taken as excluding the stormwater flow". EPA's decision to accept this language is based on our quoted determination of what it means. KDHE clarified the meaning of the underlined language in an email received 10/03/2007. This email has been included in the administrative record for this TMDL.

Discharging NPDES Facilities and their Individual Wasteload Allocations

Facility Name	NPDES#	Design Flow (MGD)	Summer Permit Limit	Winter permit Limit	Summer Load	Winter Load
Perry	KS0029084	0.11165	535	4800	2.26E+09	20.28E+09
Lecompton	KS0055581	0.0713	535	4800	1.44E+09	12.95E+09
Westar-Lawrence	KS0079821	1.2	200	2000	9.08E+09	90.83E+09
Lawrence	KS0038644	12.5	200	2000	94.62E+09	946.16E+09
Eudora	KS0094609	0.9	200	2000	6.81E+09	68.12E+09
Clearview Village	KS0090671	0.056	535	4800	1.13E+09	10.17E+09
Desoto	KS0026239	1.3	200	2000	9.84E+09	98.40E+09
Bonner Springs	KS0082881	1.4	200	2000	10.60E+09	105.97E+09
LV Co. S.D.#2	KS0087157	0.072	535	4800	1.46E+09	13.08E+09
LV Co. S.D.#3	KS0087874	0.018	4800	4800	3.27E+09	3.27E+09
JO Co. - Mill Creek	KS0088269	18.75	1316	2468	933.86E+09	1751.34E+09
KC - Plant #20	KS0080195	7.0	200	2000	52.98E+09	529.85E+09
KC - Plant #14	KS0080209	0.12	200	2000	0.91E+09	9.08E+09
JO Co. - Nelson Plant	KS0055492	15	200	200	113.54E+09	113.54E+09
Total		58.5			1241.81E+09	3773.05E+09

The Lawrence facility has the capacity of treating extraneous flow, up to 40 MGD, with chlorination. When the extraneous flow system is discharging, monitoring of the facility effluent is on a daily basis. The Nelson Complex facility in Johnson County similarly handles extraneous flows through several holding basins in Turkey Creek and nearby drainages, which divert sewer system overflows during wet weather and partially treat that wastewater prior to discharge into Turkey Creek and other small streams. Sampling of Turkey Creek is a condition of permitting these high flow discharges.

There are essentially two plants at Mill Creek. An aerated lagoon with 6.75 MGD flow and an activated sludge plant with 12 MGD flow. Mill Creek criteria were developed by combining the two plants and calculating a flow weighted average. This number is placed in a mixing zone calculation which incorporates criteria for the rapid diffuser which is used within the Mill Creek system. The end of pipe permit limits appear to be above WQS, but are calculated to meet WQS in the immediate vicinity of the diffuser even at low flows. An implicit MOS was also used to calculate these limits by assuming an instream background concentration of 100 cfu/100 ml.

Any animal feeding operations with sufficient animal units (>1000) to warrant a NPDES permit will have full containment of their wastewater as a condition of the permit. The WLA for any such operation is zero.

Phase I and II Stormwater Permits issued to MS4's in the portions of the watershed in Johnson, Wyandotte, Leavenworth or Douglas counties will reference the need to apply specific BMPs to attenuate the discharge of bacteria whenever storm water drains to the Lower Kansas River, either directly or via tributaries. While no specific numeric limits will be attached to these storm water permits, WLA is assigned to the aggregate of urban MS4 storm water influencing water quality in the Lower Kansas River. The WLA for the MS4's will be based on the proportion of runoff-driven bacteria loads that likely arise from the developed areas covered by the MS4 permits. In this case, MS4 areas comprise 28% of the drainage of the lower Kansas River. Therefore, calculation of MS4 and LA for NPS are 29% of the seasonal load duration curves (Appendix B within the TMDL), after accounting for the regular WLA for dischargers, represents the aggregate WLA for storm water. See below for daily loads values.

Calculation of Individual MS4 Wasteload Allocations at High Flows

MS4 Area	Drainage area (sq. mi.)	Pct of KS R. DA	Pct of MS4	Wet - 10% Winter WLA	Wet - 10% Summer WLA
Lawrence	28.75	2.35	8.06	2015E+09	380E+09
Bonner Springs	16.09	1.31	4.51	1128E+09	213E+09
KC KS/WY Co.	70.88	5.78	19.86	4968E+09	938E+09
Shawnee	42.65	3.48	11.95	2990E+09	564E+09

Olathe	37.57	3.06	10.53	2633E+09	497E+09
Lenexa	31.62	2.58	8.86	2216E+09	418E+09
Merriam	4.33	.35	1.21	304E+09	57E+09
Mission	0.89	.07	.25	62E+09	12E+09
Johnson Co (not included above)	124.12	10.12	34.78	8700E+09	1642E+09
Total	356.9	29.11	100.00	25017E+09	4721E+09

29% of Kansas River Drainage

Phase I: The phase I TMDL stated, "A detailed WLA and LA will be made in 2004 after sampling and more detailed assessment of the sources contributing to the bacteria impairment". Since no point sources located within the watershed, the WLA is zero (0). This phase II TMDL is the result of a more detailed WLA and LA.

LA Comment

Includes all nonpoint sources loads, natural background, and potential for future growth. If no nonpoint sources are identified the LA must be given as zero [40 CFR § 130.2(g)]. If this is a phase II TMDL any differences in phase I and phase II LAs will be documented in this section.

The LA to nonpoint sources is to eliminate any excursions by geometric means occurring in the river at flows less than the mean daily flow that is typically exceeded less than 20% of the time. Exceedances at the highest flows exceeded less than 20% of the time should be minimized such that they occur in less than 10% of the sampled periods. These TMDLs, although not modified to reflect current Surface WQS regarding bacteria, remain in force and should continue to direct placement of BMPs to abate bacteria in rural and urban areas. The nonpoint source LA is estimated as the LC-(MOS+WLA).

Based on the assessment of bacteria conditions in the Lower Kansas River, flows that are exceeded more than 60% of the time tend to indicate no problem with elevated bacteria. Runoff conditions introduce higher probabilities of bacteria excursions in the river, particularly once flows reach the level where they are exceeded less than 20% of the time, as calculated. LA for nonpoint sources represents 71% of the seasonal load duration curve after accounting for discharging NPDES facilities and their WLAs. The balance is allocated to MS4 WLAs.

Calculation of MS4 WLAs and LA for NPS (Loads in Giga-counts/day (E+09))

Flow Condition	Winter Lecompton Load	Winter KC Load	Incremental Winter Load	Winter WLA	Winter MS4 WLA	Winter LA
Dry - 90%	54389	64714	12325	10325	0	0
Low - 75%	75556	87588	12032	10325	495.03	1211.97
Normal - 50%	144192	158935	14743	10325	1281.22	3136.78
High - 25%	313908	350933	37028	10325	7743.87	18959.13
Wet - 10%	663282	759871	96589	10325	25016.56	61247.44

Flow Condition	Summer Lecompton Load	Summer KC Load	Incremental Summer Load	Summer WLA	Summer MS4 WLA	Summer LA
Dry - 90%	7882	9232	1350	1350	0	0
Low - 75%	13073	14759	1686	1350	97.44	238.56
Normal - 50%	26531	29841	3310	1350	568.4	1391.6
High - 25%	66649	76696	10047	1350	252.13	6174.87
Wet - 10%	153164	170794	17630	1350	4721.2	11558.8

Phase I: Based on the assessment of sources, the distribution of excursions from WQS and the relationship of those excursions to runoff conditions, nonpoint sources are seen as the primary cause of water quality violations. Background levels attributed to wildlife are not significant as a cause of the problem. The LA assigns responsibility for maintaining water quality below the TMDL curve over flow conditions bracketed by the 7Q10 low flow of 21cfs demarcating potential point source influence and the high flow exclusion of 660 cfs.

Margin of Safety

Submittal describes explicit and/or implicit MOS for each pollutant [40 CFR § 130.7(c)(1)]. If the MOS is implicit, the conservative assumptions in the analysis for the MOS are described. If the MOS is explicit, the loadings set aside for the MOS are identified and a rationale for selecting the value for the MOS is provided. If this is a phase II TMDL any differences in MOS will be documented in this section.

The MOS is implicit. Most facilities will have permit limits and requirements to disinfect that apply at their outfall before entering the Kansas River. The requirements to disinfect wastewater remain in place regardless of stream flow condition. There is limited allowance to use the river to dilute effluent in order to meet the criteria.

The achievement of WQS is based on evaluating the geometric mean of five samples taken in 30 days. KDHE monitoring protocols will sample no more than 5 times (thereby, giving each sample maximum weight) and over a period less than 30 days (thereby, maximizing the potential to sample similar flow conditions and events). Additionally, sampling will continue over all flow conditions, including the heretofore compliant low flow conditions. This will ensure that the historic attainment of the recreational use during lower flows will continue.

Phase I: Because there will not be a traditional LA made for fecal bacteria, the MOS will be framed around the desired endpoints of the applicable WQS. The MOS is 100 CU/100 ml and would be represented by a parallel line lying below each seasonal TMDL curve by a distance corresponding to loads associated with 100 CU/100 ml.

Seasonal Variation and Critical Conditions

Submittal describes the method for accounting for seasonal variation and critical conditions in the TMDL(s) [40 CFR § 130.7(c)(1)]. Critical conditions are factors such as flow or temperature which may lead to the excursion of WQS. If this is a phase II TMDL any differences in conditions will be documented in this section.

Seasonal variation is considered in the recreational season of primary (April 1 through October 31) and secondary (November 1 through March 31) periods. Seasonality is really expressed through prevailing flow conditions, with runoff occurring predominantly from March to July, summer base flow from August to October and winter base flow from November to February.

Public Participation

Submittal describes required public notice and public comment opportunity, and explains how the public comments were considered in the final TMDL(s) [40 CFR § 130.7(c)(1)(ii)].

A public hearing on the second round of TMDLs for the Kansas-Lower Republican Basin were held in Manhattan and Olathe on January 18 and 19, 2006. The Kansas –Lower Republican Basin Advisory Committee met to discuss the second round of TMDLs in the basin on April 7, 2005 in Lawrence, July 26, 2005 in Concordia, October 20, 2005 in Lawrence and January 26, 2006 in Topeka. The TMDL was public noticed on the KDHE TMDL web site: <http://www.kdhe.state.ks.us/TMDL>.

Monitoring Plan for TMDL(s) Under Phased Approach

The TMDL identifies a monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of WQS, and a schedule for considering revisions to the TMDL(s) (where phased approach is used) [40 CFR § 130.7].

KDHE will continue to collect bimonthly samples at stations 203, 254 and 257, including E. coli samples over each of the three defined seasons. Based on that sampling, more intensive sampling of 5 samples taken within 30 days will occur over 2010-2012. Real time turbidity sensors at the Desoto stream gaging station will be re-installed during 2008-2010 to evaluate high flow bacteria levels and the stability of the regression used to estimate E. coli bacteria levels from turbidity.

Monitoring of bacteria levels in effluent will be a condition of NPDES and state permits for the facilities discharging wastewater. This monitoring will continually assess the contributions of the wastewater systems, as well as the effectiveness in reducing bacteria levels in the effluent released to the river.

Monitoring protocols will be established as part of storm water and CSO programs to capture bacteria levels with the first flush after a storm event and subsequent weekly sampling in order to compute a geometric mean in accord with current WQS.

Phase I: The phase I TMDL stated, “KDHE will continue to collect bimonthly samples at stations 203, 257 and 254, including fecal coliform samples over each of the three defined seasons. Based on that sampling, the desired endpoints under this TMDL will be refined and direct more intensive sampling to be conducted under specified seasonal flow conditions over period 2004-2008. Sampling should also be done at stations 250, 256 and 255 for two years during 2004-2008. This phase II TMDL is the result of a more refined look at the watershed.

Reasonable Assurance

Reasonable assurance only applies when less stringent WLAs are assigned based on the assumption of nonpoint source reductions in the LA will be met [40 CFR § 130.2(i)]. This section can also contain statements made by the state concerning the state’s authority to control pollutant loads.

Reasonable assurances are not required for this TMDL because permitted facilities WLAs are set to meet WQS. Kansas has identified several Federal, State, local, and non-government organizations that may be included in the implementation process, as well as enforcement and compliance measures as needed for NPDES permits.